PATENT SPECIFICATION

621389

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Complete Specification Accepted: April 8, 1949.

(Under Section 6 (1) (a) of the Patents &c. (Emergency) Act, 1939, the proviso to Section 91 (4) of the Patents and Designs Acts, 1907 to 1946, became operative on April 15, 1946).

Index at acceptance:—Classes 20(i), A8; 20(ii), F1b1, F3(b: c); and 87(i), B1(a2y: c5b: c7: f1b: g3).

COMPLETE SPECIFICATION

Improvements in or relating to a Hut Capable of being Dismantled

We, ATELIERS JEAN PROUVÉ, a French Body Corporate, of 50, Rue des Jardiniers, Nancy, (Meurthe-et-Moselle), France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to a hut capable of being dismantled.

The invention consists in a hut capable of being dismantled of the type comprising a metal framework resting on the ground by sole plates secured to the lower ends of the up rights, supporting the roof and fitted with wall panels, and is characterised in the feature that the framework is supported exclusively by the sole plates secured to the lower ends of four corner uprights to which a horizontal floor-supporting frame is fixed so as to be supported at a distance above the ground and to constitute with said uprights a rigid structure, a roof-supporting frame of bent sheet metal being mounted on top of said uprights.

According to a further feature of the invention, the roof-supporting frame is adapted to engage the upper edges of the wall panels and the ends of the roofing elements, and may also receive ceiling panels, and carries a transverse roof purlin on which rest the central portions of the roofing elements.

The floor-supporting frame is adapted to engage the lower edges of the wall panels.

The invention is illustrated, by way of example only, in the accompanying drawings, in which :

Figure 1 represents an assembly of a hut constructed according to the invention, in perspective ;

Figure 2 is a horizontal section showing the assembly of a beam and a longitudinal member with an upright ;

Figure 3 shows one end of a longitudinal member in perspective ;

Figure 4 is a view in elevation of the parts shown in Fig. 2 ;

Figures 5, 6 and 7 are views in front elevation, in side elevation and in horizontal section respectively of one variation of construction ;

Figure 8 is a section of the frame supporting the roof work, taken on the line VIII—VIII in Figure 9 ;

Figure 9 is a partial plan view of the roof supporting frame ;

Figure 10 is a transverse section of the roof-work ;

Figure 11 shows, in section, the assembly of the corner panels ;

Figure 12 is a horizontal section of a panel ;

Figure 13 is a perspective view of the upper part of a panel ; and

Figure 14 shows the arrangement for assembling the panels.

A hut capable of being dismantled according to the invention is essentially constituted by four uprights 1, each formed by a sheet metal blank bent and welded. Each upright is provided with a sole-plate 2 serving as a support and with a gudgeon bolt 3 (Fig. 8) on which the frame 20 of the roof-work is fixed. At a certain height above the sole-plate 2 holes 5 are pierced, into which are placed linings 6 serving as guides for bolts 7 securing gussets 13. The beams 8 are obtained by bending a sheet-metal blank as represented in Figure 4. The upper part is provided with a ledge for the floor 11 and a tongue-piece 12, over which the wall panels will be placed. These beams are fixed to the uprights 1 by means of the gussets 13, which are bolted to the uprights 1 by the bolts 7. Holes 14 (Fig. 4) are pierced in the beams and are strengthened by tubular linings 14^1 serving as guides for the bolts 16. These linings prevent any deformation of the beams at the time of assembly.

The longitudinal members 9, which are also obtained by bending a sheet-metal

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blank as Figure 3 clearly shows, are supported on the beams 8. These longitudinal members are bent into Z-shape, and a tubular lining 15, serving as a guide for a fixing bolt 16, is welded into each end corner.

The upper flange of the longitudinal member is bent into the shape of a tongue 17. In order to leave sufficient room for the floor 11, and thus to form an abutment for the latter, the re-entrant part 18 of the tongue is arranged not to abut against the ledge 17^1.

The beams 8 and the longitudinal members 9 being assembled on the uprights 1, the floor is laid. In a hut of large dimensions the floor may rest upon cross-beams of a construction similar to that of the beams 8, which rest by their ends on the lower flanges of the longitudinal members 9.

In Figures 5—7 has been represented a variation of construction in which the floor-supporting frame, instead of being composed of beams 8 and longitudinal members 9, is composed of transversal and longitudinal beams 8 and 8^1 the profiles of which are similar to each other, and which are assembled on the gussets 7. Openings 19 are provided in the beams 8 and 8^1 in order to enable the fixing bolts 16 to be tightened.

In the original construction, a frame 20, for supporting the roofing, also obtained by bending a sheet-metal blank as shown in Figure 8, is fitted to the upper part of the uprights 1. This frame is formed from four parts assembled by right-angle gussets 21, which may be fixed by welding or otherwise.

This frame is kept in position on the uprights by gudgeon bolts 3 passing through holes provided in the frame, and the whole is made fast by means of nuts.

In order to support the roofing, stirrup members 22 are provided on the frame 20, and on these stirrup members rest the ends of a single roof purlin 23, obtained by bending a sheet-metal blank.

A tongue-piece 24 is provided in the frame 20 in order to receive the wall panels 27.

When the hut comprises a ceiling, there is provided on the return or flank of the tongue-piece 24 a U-section frame 25, into which the panel constituting the ceiling can be inserted.

The roofing may be made of any suitable material, such as wood or metal. Wooden roofing may consist of grooved boards placed side by side bent by virtue of their flexibility over the longitudinal roof purlin and set into the profile 20^1 of the frame 20. This roofing may be covered with bituminated millboard. Metal roofing may be constituted by a series of sheet-metal panels 26, both ends of which are bent round so as to be capable of hooking into one another as represented in Figure 8.

The panels 26 are bent over the roof purlin and fastened on to the edge of the frame 20.

The structure hereinbefore described may be provided with walls formed by panels made of wood, of wood and fibro-cement, of cement, or of metal. These panels are constituted by two walls 27, assembled at both vertical ends on uprights 28 and at the upper and lower parts on horizontal cross beams 28^1. The latter are not fixed like those that are vertical but are offset in order to form a groove which will be capable of being fitted over the tongue pieces of the beams 8 and of the longitudinal members 9.

In order to facilitate the mounting of the panels on the structure, one of the walls, the internal wall for example, is of a length shorter than that of the other wall. The empty space thus left is filled by a removable lath 29, which is fixed by means of screws or otherwise to the uprights and to the cross beams. This construction enables the panels to be put into position very quickly, since all that is necessary is to introduce the tongue piece of the beams and of the longitudinal members into the lower groove provided, and then, by causing it to effect a slight angular movement, to apply it to the tongue piece of the upper frame. The panel being in this position, the removable lath 29 is put into place. From this moment the panel is fixed to both tongue pieces.

In order to increase the firmness of the panels the walls of the latter are rendered convex either by a vertical central lath, or by a series of springs, or else by a heat-insulating filling. In order to effect such insulation, the panels may be filled with any suitable insulating material.

In the corners of the hut the ends of the panels fit into a profiled part obtained by bending a metal blank made of two parts 30 and 31 (Fig. 11), which, by means of bolts 32, can be strongly tightened on the uprights 28.

The water-tight joining of two panels is effected by means of profiled-iron butt straps 33 and 34, applied to the uprights with the interposition of a yielding joint constituted for example by felt strips 33*a* and 34*a*.

The profiled parts 33 and 34 are secured to the uprights by means of bolts 35, the heads of which are sunk into a profiled part 35^1 obtained by bending a sheet-metal blank. The whole is kept in position by winged nuts 36.

It need hardly be said that the hut hereinbefore described may be combined

with other similar elements so as to increase its capacity. The hutting thus obtained may be divided into compartments by partitions of a construction similar to that of the panels, or by single panels. The outer panels may be provided with windows and doors so as to allow of comfortable habitability of the hut.

The example described and represented may vary in its constructional dimensions without thereby departing from the scope of the invention.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is :—

1. A hut capable of being dismantled, of the type comprising a metal framework resting on the ground by sole plates secured to the lower ends of the uprights, supporting the roof and fitted with wall panels, characterised in that the framework is supported exclusively by the sole plates secured to the lower ends of four corner uprights to which a horizontal floor-supporting frame is fixed so as to be supported at a distance above the ground and to constitute with said uprights a rigid structure, a roof-supporting frame of bent sheet metal being mounted on top of said uprights.

2. A hut capable of being dismantled as claimed in Claim 1, characterised in that the members of the floor-supporting frame are fixed to the uprights by means of supporting gussets.

3. A hut capable of being dismantled as claimed in Claim 1, characterised in that the members of the floor-supporting frame are formed with ledges adapted to support the edges of the floor elements and with vertical tongues adapted to engage the lower edges of the wall panels.

4. A hut capable of being dismantled as claimed in Claim 3, characterised in that the vertical tongues of certain members of the floor-supporting frame comprise a bent-back portion overlying the floor-supporting ledge.

5. A hut capable of being dismantled as claimed in Claim 1, characterised in that the roof-supporting frame is made of profiled metal, is formed with a depending tongue adapted to engage the upper edges of the wall panels, and carries a transverse roof purlin on which rest the central portions of the roofing elements, the ends of which are engaged into the profile of the roof-supporting frame.

6. A hut capable of being dismantled as claimed in Claim 1 or 5, characterised in that the roof-supporting frame comprises an inwardly directed U-section portion adapted to receive ceiling panels.

7. A hut capable of being dismantled substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 15th day of April, 1946.

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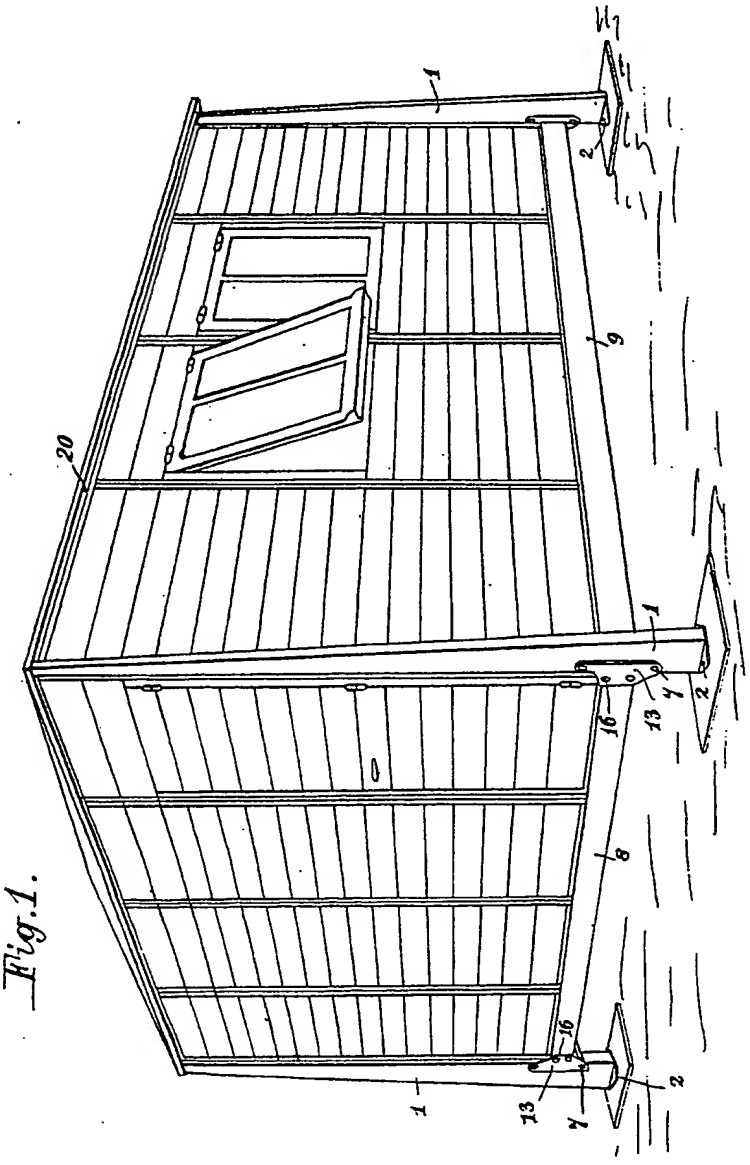
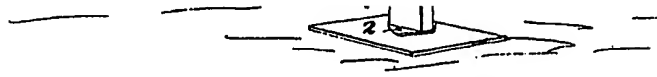


Fig. 1.



SHEET 1

Fig.13.

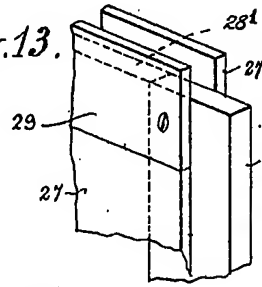


Fig.3.

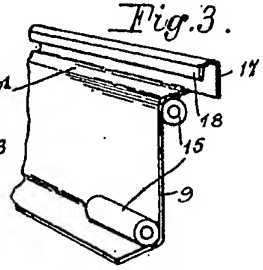


Fig.2

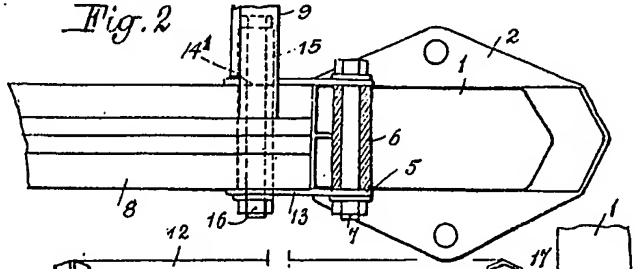


Fig.14

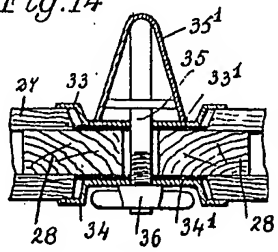


Fig.11.

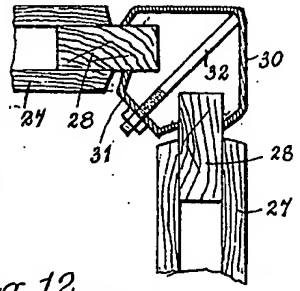
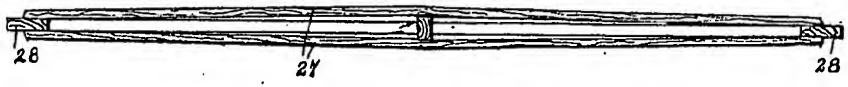


Fig.12



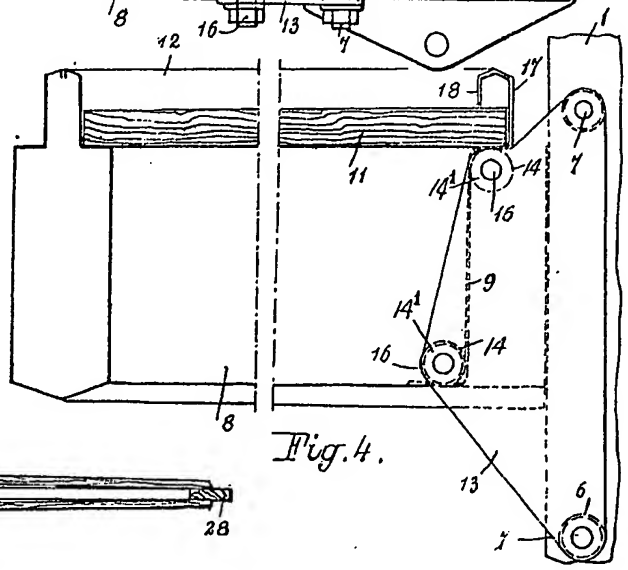


Fig.4.

4 SHEETS
SHEET 2

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621,389 COMPLETE SPECIFICATION

SHEET 1

Fig. 1.

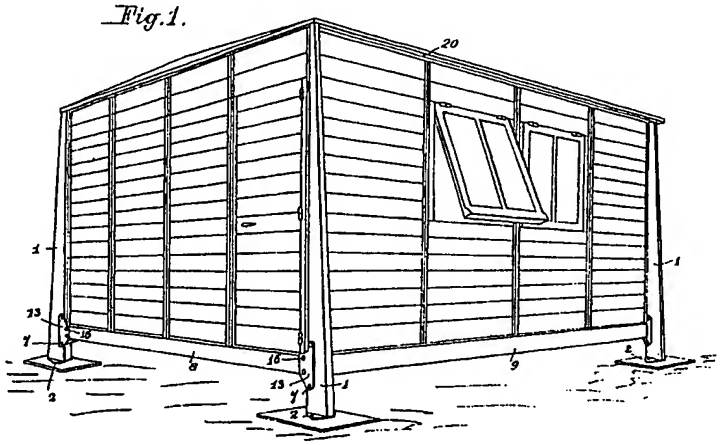


Fig. 13.

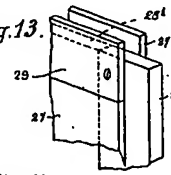


Fig. 3.

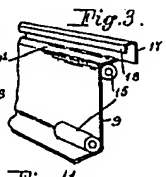


Fig. 2

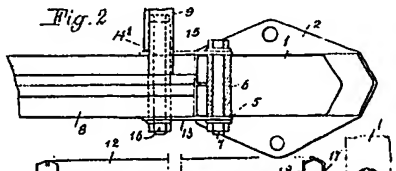


Fig. 14

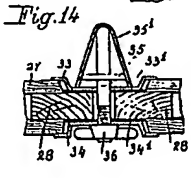


Fig. 11.

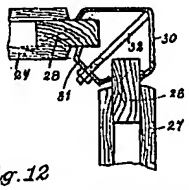
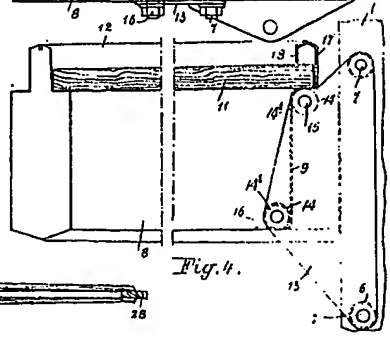


Fig. 12

Fig. 4.



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621,389 COMPLETE SPECIFICATION

SHEET 3

Fig. 6.

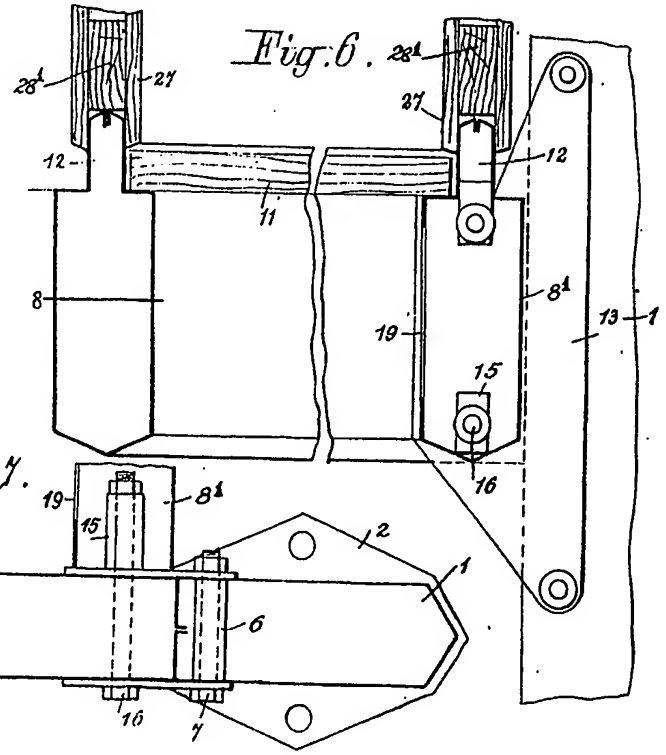

Fig. 5.

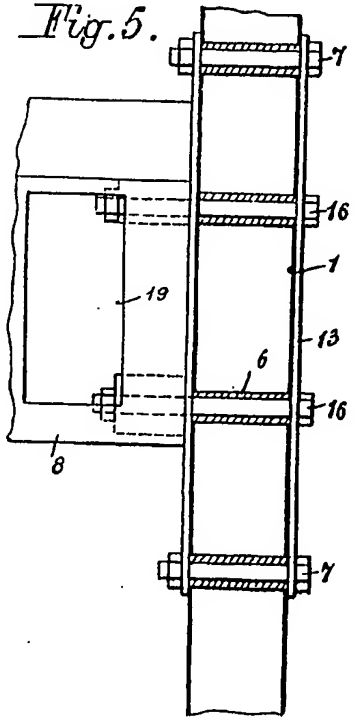

Fig. 7.

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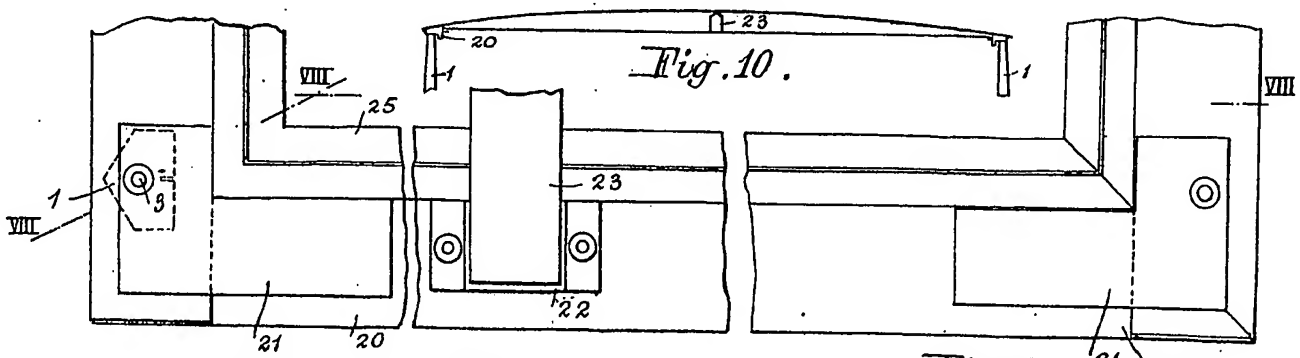

Fig. 10.

Fig. 9.

Fig. 8.

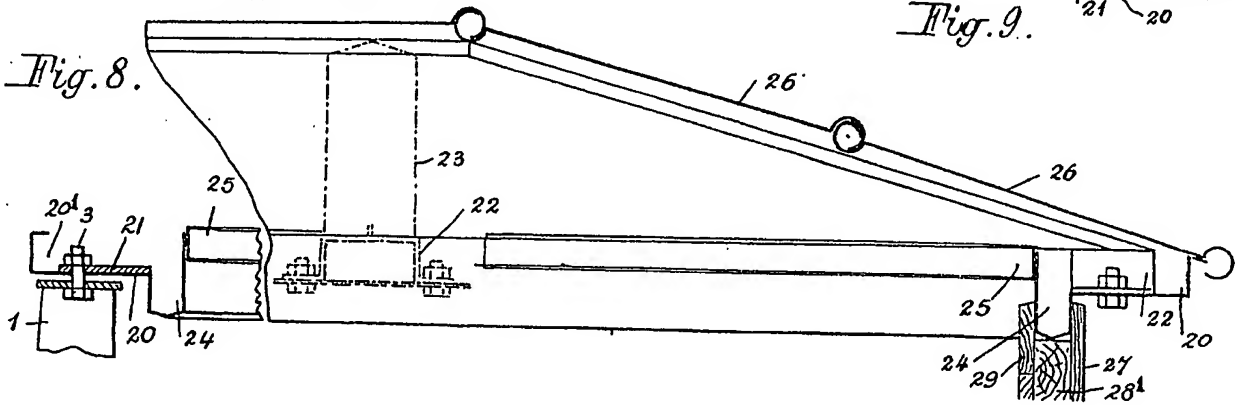

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Fig. 6.

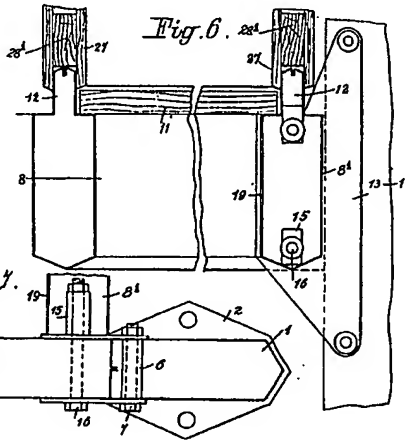

Fig. 5.

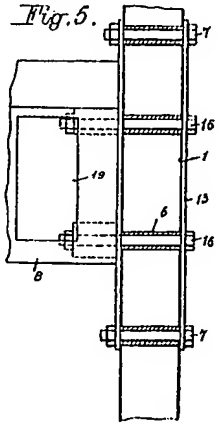

Fig. 7.

Fig. 10.

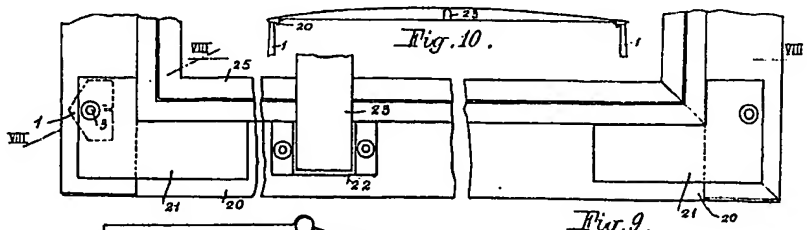

Fig. 9.

Fig. 8.

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